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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/867,993 | 05/24/2001 | Patrick W. Fink | MSC-23228-1 | 7349 |

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EXAMINER

ISSING, GREGORY C

| | |
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| ART UNIT | PAPER NUMBER |
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3662

DATE MAILED: 04/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,993

Applicant(s)

FINK ET AL.

Examiner

Gregory C. Issing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims fail to distinctly set forth the subject matter since it is unclear how the mounting of one antenna can have a “non-unique phase center”. Additionally, the language “each . . . having a non-unique phase center” appears to describe that each antenna has the same phase center which appears contradictory to intent of the subject matter. If each antenna had a unique phase center, then each would be directed uniquely. However, if each has a non-unique phase center, then each of the antennas share a common phase center. The claims fail to make clear how carrier phase, which is the disclosed measurement, is used to provide the location measurements when using a single antenna.

In claim 14, the language “each . . . having a plurality of phase centers” fails to clearly claim the subject matter; how does a single antenna have plural phase centers? The language “determining one or more values related to said plurality of phase centers” is unclear. The claim’s preamble sets forth determining location characteristics of the body, but the body of the claim fails to set forth any step to provide such; thus, the claim language fails to distinctly set forth the subject matter.

Claims 27-32 fail to distinctly set forth the subject matter since the variables are not defined.

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3. In claim 33, the language fails to clearly set forth the subject matter with regard to “a radiator system”. The language “said one or more antennas” lacks a proper antecedent basis. This claim does not appear to describe subject matter having the same inventive concept of the remain set of claims; although the preamble sets forth a system for determining location characteristics, there is nothing in the body of the claim which provides such. The body of the claim appears to merely set forth the “body” having an antenna providing wide coverage. As a note, upon being clarified, this claim may result in a restriction requirement.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lightsey.

Lightsey discloses the claimed method and system for attitude determining using GPS carrier phase measurements from non-aligned antennas.

Claims 1-44 are rejected under 35 U.S.C. 102(a) as being anticipated by Fenton et al.

Fenton et al disclose the claimed subject matter as best understood, including a pair of antennas mounted opposite from each other on the circumference of a rotating body for measuring phase and frequency information from a plurality of spaced transmitters, i.e. the GPS satellites. Based on the measurements, the position, acceleration, attitude and rotational rate of the body are accurately determined.

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Claims 1-3, 5, 12, 13, 14, 22, 24, 25, 26, 33-37, and 40 are rejected under 35

U.S.C. 102(a) as being anticipated by Ray et al.

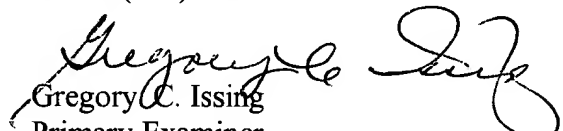
Ray et al disclose a method and system for determining location characteristics on the basis of carrier phase signals from a plurality of spaced transmitters, GPS satellites. Figure 2 shows a plurality of antennas having respective phase centers 41p, 43p, 45p, 47p and 49p.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156.

The examiner can normally be reached on Mon-Thurs 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703)-306-4171. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


Gregory C. Issing
Primary Examiner
Art Unit 3662

gci
April 22, 2002